REMARKS

Claims 1-3 and 24-32 currently remain in the application. Claims 4-23 have been canceled. Claims 24-32 are newly added claims. Claims 1-3 are herein amended.

The title of record has been changed according to the changes effected in the claims section.

In said Final Office Action dated January 5, 2004, claims 1-4, 14-17 and 22-23, which were then pending, were rejected under 35 U.S.C. 102 as being anticipated individually by Shirkhanzadeh, JP-03203977 and WO-9532744. Rejection of a claim under 35 U.S.C. 102 is justified only when each of the inventive elements in that claim is disclosed in one reference. None of these cited references discloses every inventive element in independent claim 1, at least as amended herein, or independent claim 29 newly introduced herein, and hence it is believed that all claims currently pending claims should be deemed allowable.

It is to be noted firstly that the materials as currently claimed are of a three-layer structure having (1) a base, (2) a calcification layer, and (3) extracellular matrices, while none of the cited references disclosed such a three-layer structure. Shirkhanzadeh relates only to the technology of obtaining a material with titanium surface containing calcium or phosphoric acid but does not even mention extracellular matrices. JP-03203977 relates to the use of an electrode immersed in a solution for causing hydroxyapatite. A current passed through such an electrode would harm any extracellular matrices that may be formed and hence an organism-compatible material of this invention with extracellular matrices cannot reasonably be expected to be formed by this technology. WO-9532744 relates to the method of causing hydroxyapatite to become attached by heating a material to 80°C but extracellular matrices will be killed at such temperatures and hence this method also fails to produce any organism-compatible material with extracellular matrices.

Indeed, the Examiner seems to agree that none of the cited references disclosed any three-layer structure with extra-cellular matrices because the Examiner's argument is that "cells would be expected to migrate to the coated structure" upon implantation. Organism-compatible materials of this invention are distinguishable in that they are of the aforementioned three-layer structure already before they are implanted to a living organism.

This point has been made clear in new independent claim 29 wherein extracellular matrices are explicitly said to be formed before it is applied to an organism. Thus, claim 29 and claims dependent therefrom are believed to be distinguishable from the cited references and hence allowable in spite thereof.

It is further to be commented that although cells may be expected to migrate to the two-layer structure of any of the cited references so as to secrete an extracellular matrix upon implantation, as asserted by the Examiner, it cannot be expected to be immediately after the implantation that such an extracellular matrix grows and has its one end buried into the hydroxyapatite layer deeply enough to be securely attached thereto. In other words, the binding between the cells of the organism and the organism-compatible material of these cited references would remain weak and unstable for a significantly long period of time.

It is to be noted secondly that the extracellular matrices which form one of the three layers are not of any arbitrary kind of cells but of the cells of the organism to which the subject organism-compatible material is to be implanted. If materials according to the cited references are implanted, cells may indeed be expected to migrate to the coated structure upon implantation and secrete an extracellular matrix, as intimated by the Examiner, but the cells that may migrate to the coated structure upon implantation and secrete an extracellular matrix may be cells of any kind. There is absolutely no guarantee that a matrix of cells of a desired kind would surely be formed. According to the present invention and as described explicitly in amended independently claim 1, the extracellular matrices are formed by cells of a specified region of the organism where the material is intended to be applied.

It now goes without saying that there are a countless number of different kinds of cells that may be migrating. Some cells may be for growing bones and some may be for growing tissues of different types. According to the present invention, extracellular matrices are of the cells of a specified type that themselves will induce cells of their own kind and start breeding them and hence a strong bond between the organism-compatible material and the cells can be expected from the initial moment of the implantation.

None of the cited references is addressed to the problem of specifying the kind of cells to be grown for forming an extracellular matrix. It is therefore to be concluded that these cited references cannot predicate the Examiner's rejection not only on the ground of

anticipation but also on the ground of obviousness.

Claims 1-4, 14-17 and 22-23 were rejected also under 35 U.S.C. 102 as being anticipated by DE-19944970 with the Examiner's caveat that foreign priority papers cannot be replied upon to overcome this rejection without a translation thereof. According to what the undersigned attorney has been told, however, such a translation has already been filed through the patent law firm which was then of record. The Examiner is therefore requested to check his file and to thereby ascertain if it has not been received yet. An additional copy will be submitted if the Examiner will so request.

In summary, it is believed that the instant Amendment is completely in response to said Final Office Action and hence that the application is now in condition for allowance.

Also being submitted herewith is Revocation of Prior Power of Attorney and Grant of New Power of Attorney signed by the inventors-applicants. It is therefore requested that subsequent communications from the Patent and Trademark Office be accordingly addressed to the undersigned attorney.

Respectfully submitted,

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